

Borehole

22-08-09**Log Event A****Borehole Information**

Farm : <u>BY</u>	Tank : <u>BY-108</u>	Site Number : <u>299-E33-120</u>
N-Coord : <u>46,008</u>	W-Coord : <u>53,495</u>	TOC Elevation : <u>649.34</u>
Water Level, ft :	Date Drilled : <u>7/28/1970</u>	

Casing Record

Type : <u>Steel-welded</u>	Thickness, in. : <u>0.280</u>	ID, in. : <u>6</u>
Top Depth, ft. : <u>0</u>	Bottom Depth, ft. : <u>100</u>	

Borehole Notes:

According to the driller's records, this borehole was not perforated or grouted.

Equipment Information

Logging System : <u>2</u>	Detector Type : <u>HPGe</u>	Detector Efficiency: <u>35.0 %</u>
Calibration Date : <u>03/1995</u>	Calibration Reference : <u>GJPO-HAN-1</u>	Logging Procedure : <u>P-GJPO-1783</u>

Log Run Information

Log Run Number : <u>1</u>	Log Run Date : <u>8/31/1995</u>	Logging Engineer: <u>Alan Pearson</u>
Start Depth, ft.: <u>99.0</u>	Counting Time, sec.: <u>100</u>	L/R : <u>L</u> Shield : <u>N</u>
Finish Depth, ft. : <u>35.0</u>	MSA Interval, ft. : <u>0.5</u>	Log Speed, ft/min.: <u>n/a</u>

Log Run Number : <u>2</u>	Log Run Date : <u>9/1/1995</u>	Logging Engineer: <u>Alan Pearson</u>
Start Depth, ft.: <u>0.0</u>	Counting Time, sec.: <u>100</u>	L/R : <u>L</u> Shield : <u>N</u>
Finish Depth, ft. : <u>2.5</u>	MSA Interval, ft. : <u>0.5</u>	Log Speed, ft/min.: <u>n/a</u>

Log Run Number : <u>3</u>	Log Run Date : <u>9/1/1995</u>	Logging Engineer: <u>Alan Pearson</u>
Start Depth, ft.: <u>3.0</u>	Counting Time, sec.: <u>100</u>	L/R : <u>R</u> Shield : <u>N</u>
Finish Depth, ft. : <u>5.0</u>	MSA Interval, ft. : <u>0.5</u>	Log Speed, ft/min.: <u>n/a</u>

Log Run Number : <u>4</u>	Log Run Date : <u>9/1/1995</u>	Logging Engineer: <u>Alan Pearson</u>
Start Depth, ft.: <u>5.5</u>	Counting Time, sec.: <u>100</u>	L/R : <u>L</u> Shield : <u>N</u>
Finish Depth, ft. : <u>36.0</u>	MSA Interval, ft. : <u>0.5</u>	Log Speed, ft/min.: <u>n/a</u>

Analysis Information

Borehole

22-08-09**Log Event A**Analyst : P.D. HenwoodData Processing Reference : P-GJPO-1787Analysis Date : 2/28/1996**Analysis Notes :**

This borehole was logged in four log runs. The pre- and post-survey field verification spectra show consistent activities, indicating the logging system operated properly during data collection. Energy calibrations differed because of gain drift in the instrumentation. Gain drifts during data collection necessitated energy versus channel number recalibrations during processing of the data to maintain proper peak identification. A depth overlap, where data were collected on separate days at the same depth, occurred in this borehole at 35 ft. The calculated concentrations were within the statistical uncertainty of the measurements, indicating very good repeatability.

The casing thickness is 5/16 (0.313) inch. Casing-correction factors for a 0.33-in.-thick steel casing were applied during analysis, which may cause an almost negligible over-estimation of the concentrations.

Cs-137 was measured almost continuously from the ground surface to about 19 ft and intermittently in the remainder of the borehole. Np-237 and Eu-152 photon peaks were identified in the spectrum recorded at 79 ft, but the calculated concentrations were less than the MDLs at 1.1 and 1.3 pCi/g, respectively. Therefore, positive identification of these radionuclides is not statistically defensible and longer counting times are required to quantify the concentration of these radionuclides. Data were collected in real time between 3 and 5 ft because of a high count rate.

Additional information and interpretations of log data are included in the main body of the Tank Summary Data Reports for tanks BY-108 and BY-111.

Log Plot Notes:

Separate log plots show the man-made (e.g., Cs-137) and the naturally occurring radionuclides (K-40, U-238, and Th-232). The natural radionuclides can be used for lithology interpretations. The headings of the plots identify the specific gamma rays used to calculate the concentrations.

A combination plot includes both the man-made and natural radionuclides, in addition to the total gamma derived from the spectral data and the Tank Farms gross gamma log. The gross gamma plot displays the latest available digital data. No attempt has been made to adjust the depths of the gross gamma logs to coincide with the SGLS data.

Uncertainty bars on the plots show the statistical uncertainties for the measurements as 95-percent confidence intervals. Open circles on the plots give the minimum detection level (MDL). The MDL of a radionuclide represents the lowest concentration at which positive identification of a gamma-ray peak is statistically defensible.